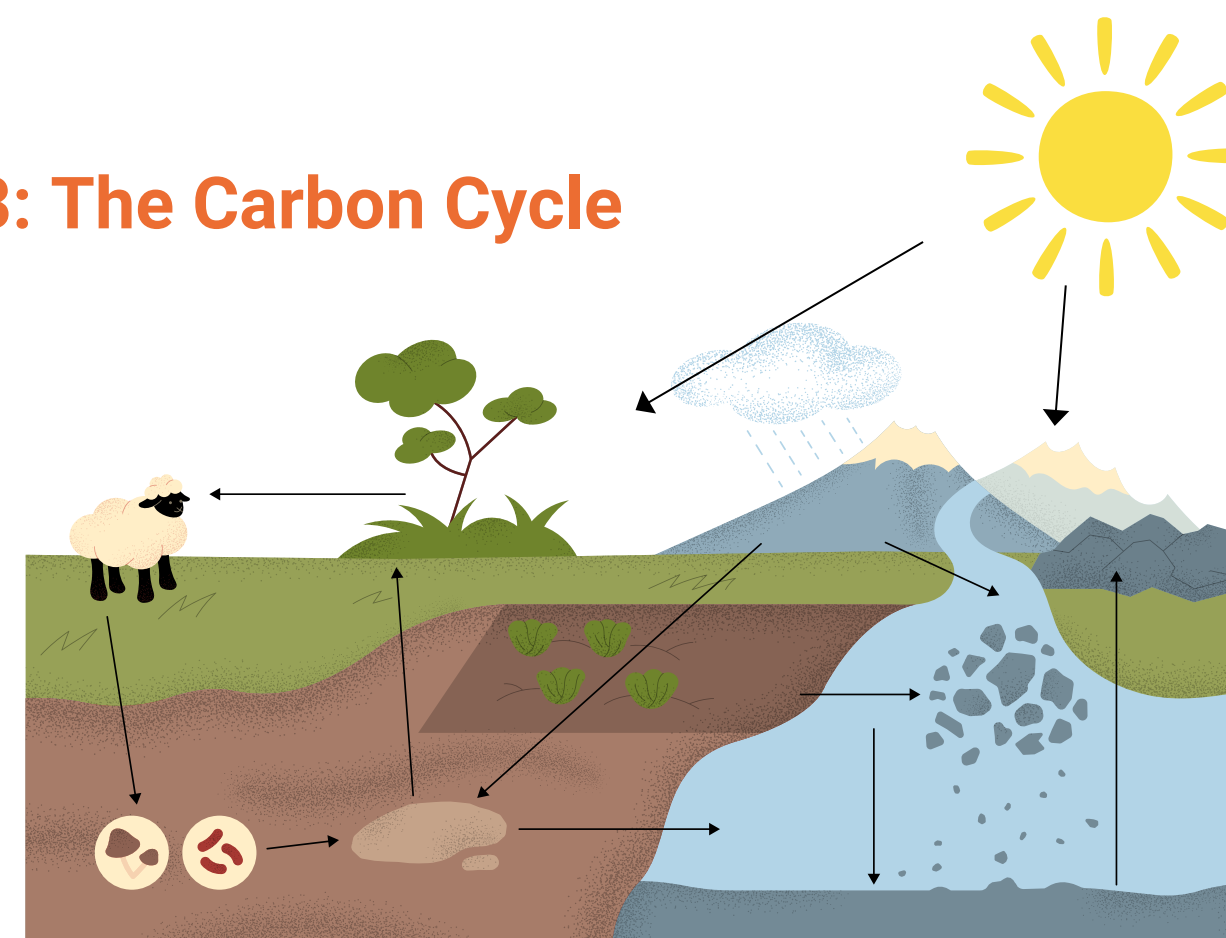




Interactive Escape Rooms for Climate Crisis Awareness and Civic Engagement in School Education

Module 1: Why is Our Climate in Crisis?

Unit 3: The Carbon Cycle

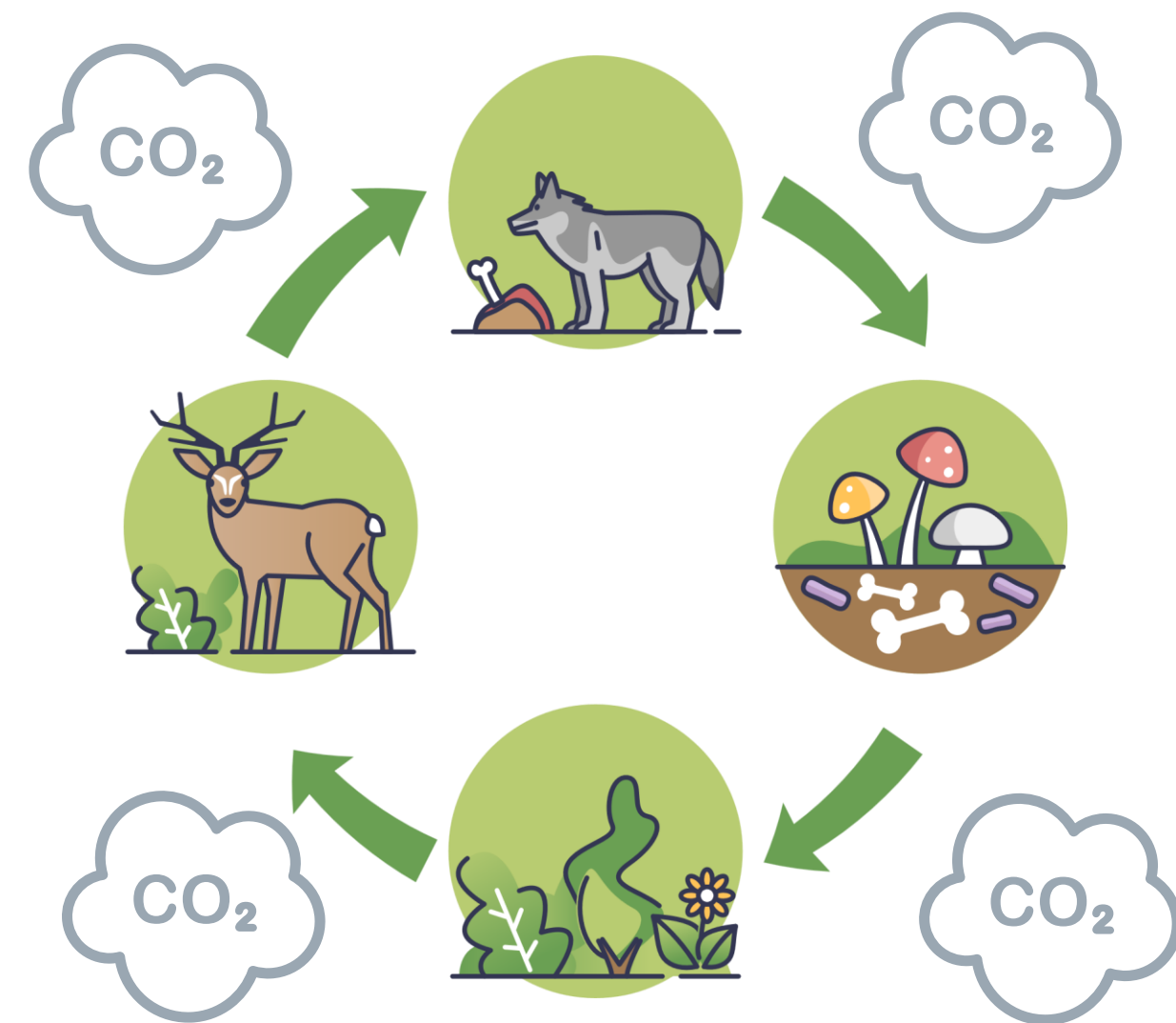


What is the Carbon Cycle?



It is the movement of carbon dioxide (CO₂)

- It is a type of Greenhouse Gas made from one carbon atom and 2 oxygen atoms
- Carbon moves through air, land, oceans, and living things:
 - Plants breathe in CO₂ and release oxygen for other animals (including humans)
 - Animals breathe in oxygen and breathe out CO₂, continuing the cycle
- There are many carbon sinks and sources, which constantly absorb and release CO₂
 - They all play a part in the process known as the **carbon cycle**



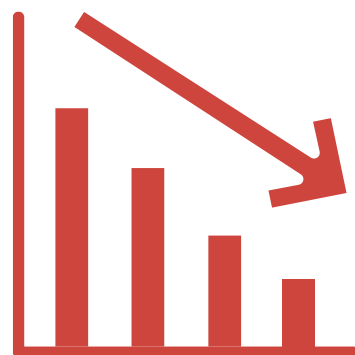
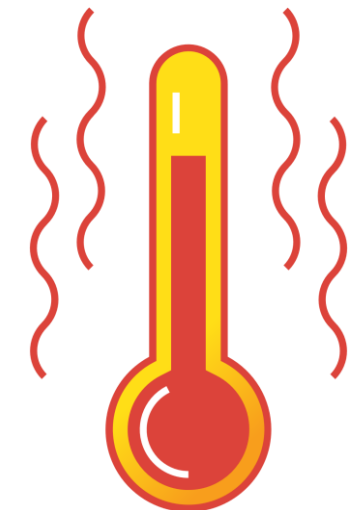
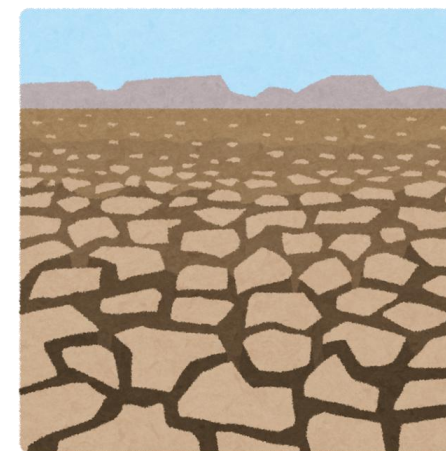
[Interactive Carbon Cycle infograph](#)

When the Natural Carbon Cycle is Disrupted



Balanced carbon cycle = balanced planet

- Human industrial activities disrupt this balance, causing global warming/climate change
 - This leads to severe consequences for the planet's ability to support plant and animal life (including humans)



Carbon Cycle Card Game



Learn how carbon moves throughout the planetary ecosystem

Instructions:

- Split into groups of 5-6 players each
- Place the starting carbon dioxide amounts in each reservoir (see game board)
- The game consists of 8 rounds, with 3 phases in each round: natural cycle (**green cards**), harmful human contributions (**red cards**), and human balancing actions (**blue cards**)
- For each round students will draw 1 card from both the green and red decks + 3 cards from the blue sub-decks (1 per sub-deck) and move the carbon pieces according to card instructions
- After drawing from the blue decks, students will choose **1 card** to play, which will mitigate the amount of carbon emitted from the red card; therefore, **wait to move red card carbon pieces until blue card is played!**

Carbon Cycle Card Game

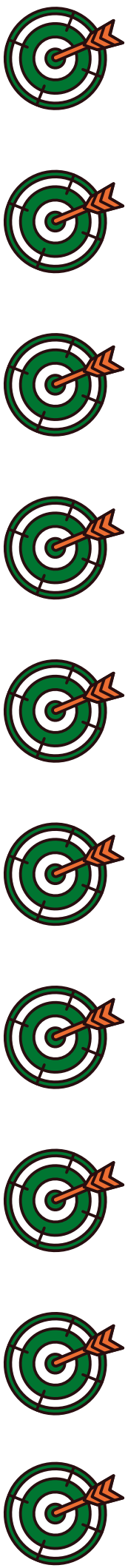


Learn how carbon moves throughout the planetary ecosystem

Instructions (continued):

- The objective is to not let the atmosphere accumulate too much carbon dioxide (23+ pieces)
 - If this happens, the game ends immediately in failure
 - NB: High impact blue cards can only be played **twice per game!**

The team(s) that manages to keep CO₂ levels in the atmosphere between 15 and 17 wins!



Key takeaways



- The natural carbon cycle, before human industrialization, ensured planetary balance of CO₂
- Human industrial activities, through the burning of fossil fuels, disrupted this balance and set the planet's climate on a dangerous path
 - More carbon emissions = warmer planet, more intense weather events, and disruptions to plant and animal livelihoods
- There are actions humans can take to reduce carbon emissions and even remove CO₂ from the atmosphere

What are some natural sources of carbon absorption and transfer?

How do humans contribute to carbon emissions? What can we do to reduce them?



What happens if too much carbon is transferred to the atmosphere and does not get absorbed?



Thank you!

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